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11 APPLE INC.

12 UNITED STATES DISTRICT COURT
13 SOUTHERN DISTRICT OF CALIFORNIA
14

15 ODYSSEY WIRELESS, INC.,

16 Plaintiff,

17 v.

18 APPLE INC.,

19 Defendant.
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Case No. 3:15-CV-01735-H-RBB

**APPLE INC.'S MEMORANDUM OF
CONTENTIONS OF FACT AND LAW**

Trial: November 1, 2016
Judge: Hon. Marilyn L. Huff

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1 **I. INTRODUCTION**

2 Pursuant to the Scheduling Order (Dkt. 111) and the Civil Local Rules,
3 including Civ. L.R. 16.1.f.2 and 16.1.f.3.e, Apple hereby provides its Memorandum
4 of Contentions of Fact and Law. The Final Pretrial Conference is scheduled for
5 October 21, 2016. Apple reserves the right to amend these disclosures, including as
6 a result of the meet and confer between the parties, additional rulings from the
7 Court, and in response to the additional pending discovery resulting from
8 Defendants' motion to compel. Apple further identifies its filings in this case,
9 including its claim construction briefing, its motion to dismiss, motions for
10 summary judgment and *Daubert* motion, its contentions and discovery responses,
11 and its expert reports as providing further details regarding its contentions of fact
12 and law.

13 **II. PATENT CASE DISCLOSURES (CIV. L.R. 16.1.F.3.E).**

14 **A. Invalidity (Civ. L.R. 16.1.f.3.e(1))**

15 At trial, Apple intends to introduce evidence regarding invalidity from a
16 variety of sources, including exhibits and witness testimony. Witnesses that may
17 testify regarding invalidity issues, such as the scope of the prior art, include Apple's
18 expert witness, Dr. Anthony Acampora and, on cross-examination, Odyssey's
19 expert, Dr. Mung Chiang. Several fact witnesses may also testify regarding the
20 state and scope of the prior art, the level of skill in the art, and other invalidity
21 issues, including Dr. Carl Andren, Dr. Hyung Myung, Sachin Sane, Sami
22 Almalfouh, Dr. Robert Love.

23 Apple provides the following short summary regarding the invalidity of the
24 asserted claims. In addition, the disclosures from Apple's expert reports, its
25 invalidity contentions, its discovery responses, and the depositions of the witnesses
26 identified above are incorporated by reference, including the additional prior art
27 references discussed therein. The specific combinations of prior art references, as
28

1 well as evidence regarding secondary considerations, are also described in Apple's
2 disclosures, discovery responses, and expert reports.

3 **1. Points of law**

4 **a. The Court's claim constructions**

5 The Court has addressed disputes between the parties regarding claim scope.
6 (*E.g.*, Dkt. 169; Dkt. 322 at 19-22 & n.6.) In addition, Odyssey's rebuttal invalidity
7 report presented several additional arguments about claim scope, which have not
8 yet been addressed.

9 **b. Anticipation**

10 A patent is anticipated if a prior art reference discloses all of the elements,
11 expressly or inherently. 35 U.S.C. § 102. Under § 102(b), a patent is invalid if "the
12 invention was patented or described in a printed publication in this or a foreign
13 country ... more than one year prior to the date of the application for patent in the
14 United States" 35 U.S.C. § 102(b) (pre-AIA version applicable to patents-in-
15 suit). "Whether a given reference is a 'printed publication' depends on whether it
16 was 'publicly accessible'" *Bruckelmyer v. Ground Heaters*, 445 F.3d 1374,
17 1378 (Fed. Cir. 2006). "Accessibility goes to the issue of whether an interested
18 member of the relevant public could obtain the information if they wanted to."
19 *Constant v. Advanced Micro-Devices*, 848 F.2d 1560, 1569 (Fed. Cir. 1988). "[A]
20 reference can anticipate a claim even if it 'd[oes] not expressly spell out' all the
21 limitations arranged or combined as in the claim, if a person of skill in the art,
22 reading the reference, would 'at once envisage' the claimed arrangement or
23 combination." *Kennametal v. Ingersoll Cutting Tool*, 780 F.3d 1376, 1381 (Fed.
24 Cir. 2015) (quoting *In re Petering*, 301 F.2d 676, 681 (C.C.P.A. 1962)). In
25 addition, to anticipate, "the reference need not satisfy an *ipsissimis verbis* test." *In*
26 *re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009) (citing *In re Bond*, 910 F.2d 831,
27 832 (Fed. Cir. 1990)). "[A] prior art reference may anticipate when the claim
28 limitation or limitations not expressly found in that reference are nonetheless

1 inherent in it.” *Leggett & Platt v. VUTEK*, 537 F.3d 1349, 1354 (Fed. Cir. 2008)
 2 (quoting *MEHL/Biophile Int’l v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999)).

3 c. Obviousness

4 A patent is obvious if “the differences between the subject matter sought to
 5 be patented and the prior art are such that the subject matter as a whole would have
 6 been obvious at the time the invention was made to a person having ordinary skill
 7 in the art to which said subject matter pertains.” 35 U.S.C. § 103(a); *KSR v.*
 8 *Teleflex*, 550 U.S. 398, 406 (2007). Obviousness is a question of law based on (1)
 9 the scope and content of the prior art, (2) the differences between the claims and
 10 prior art, (3) the level of ordinary skill in the pertinent art, and (4) objective indicia
 11 of nonobviousness. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-
 12 18 (1966). “[T]he combination of familiar elements according to known methods is
 13 likely to be obvious when it does no more than yield predictable results,” thus the
 14 question is “whether the improvement is more than the predictable use of prior art
 15 elements according to their established functions.” *KSR*, 127 S. Ct. at 1731.

16 The Federal Circuit has repeatedly held that secondary factors cannot trump a
 17 strong prima facie case of obviousness, as in this case. *Ohio Willow Wood v. Alps*
 18 *South*, 735 F.3d 1333, 1344 (Fed. Cir. 2013) (affirming summary judgment of
 19 obviousness – “[W]here a claimed invention represents no more than the
 20 predictable use of prior art elements according to established functions, as here,
 21 evidence of secondary indicia are frequently deemed inadequate to establish non-
 22 obviousness.”); *Tyco Healthcare Grp. v. Mut. Pharm.*, 642 F.3d 1370, 1377 (Fed.
 23 Cir. 2011) (affording “little weight” to testimony that inventor’s experimental
 24 results would have been surprising at the time based on the “lack of support in the
 25 record for [expert’s] interpretation of the prior art). In addition, “[a] nexus between
 26 ... [secondary factors] and the claimed features is required” before secondary
 27 considerations can dislodge the determination. *Brown & Williamson Tobacco Corp*
 28 *v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000).

Odyssey's enablement arguments are irrelevant to obviousness. "Even if a reference discloses an inoperative device, it is prior art for all that it teaches." *Beckman Instruments v. LKB Produkter*, 892 F.2d 1547, 1551 (Fed. Cir. 1989). Even if the reference was not enabling per se, "a non-enabling reference may qualify as prior art for the purpose of determining obviousness under 35 U.S.C. 103." *Symbol Techs. v. Opticon*, 935 F.2d 1569, 1578, 19 USPQ2d 1241, 1247 (Fed. Cir. 1991).

d. Section 112

The Federal Circuit has expressly cautioned patentees: "[B]eware of what one asks for." *Liebel-Flarsheim v. Medrad*, 481 F.3d 1371, 1380 (Fed. Cir. 2007). In seeking broad claim scope, a patentee can extend the scope of the claim past the scope of the described and enabled embodiments and render the claim invalid. *Id*; *Sitrick v. Dreamworks*, 516 F.3d 993, 999 (Fed. Cir. 2008) (requiring "full scope"); *LizardTech v. Earth Res. Mapping*, 424 F.3d 1336, 1344-45 (Fed. Cir. 2005). The Section 112 requirements prevent the scope of the claims from "overreach[ing] the scope of the inventor's contribution." *Ariad Pharms. v. Eli Lilly & Co.*, 598 F.3d 1336, 1353-54 (Fed. Cir. 2010) (*en banc*). "Tossing out the mere germ of an idea" and discussing a "mere wish or plan" does not meet the written description requirement. *Genentech v. Novo Nordisk*, 108 F.3d 1361, 1366 (Fed. Cir. 1997); *Ariad*, 598 F.3d at 1350, 1356; *Auto. Techs. Int'l v. BMW of N. Am.*, 501 F.3d 1274, 1282 (Fed. Cir. 2007) (mechanical sensor disclosure inadequate for broad claim that covered both electronic sensors and mechanical sensors).

Section 112 requires that "[t]he specification shall contain a written description of the invention." 35 U.S.C. § 112(a). "To fulfill the written description requirement, the patent specification must describe an invention in sufficient detail that one skilled in the art can *clearly conclude* that the inventor invented what is claimed." *Cordis v. Medtronic Ave*, 339 F.3d 1352, 1364 (Fed. Cir. 2003) (emphasis added). "[T]he test for sufficiency is whether the disclosure

1 of the application relied upon reasonably conveys to those skilled in the art that the
2 inventor had possession of the claimed subject matter as of the filing date.” *Ariad*,
3 598 F.3d at 1351. “It is not sufficient for purposes of the written description
4 requirement of § 112 that the disclosure, when combined with the knowledge in the
5 art, would lead one to speculate as to modifications that the inventor might have
6 envisioned, but failed to disclose.” *Anascope v. Nintendo of Am.*, 601 F.3d 1333,
7 1340 (Fed. Cir. 2010) (quoting *Lockwood v. American Airlines*, 107 F.3d 1565,
8 1572 (Fed. Cir. 1997)).

9 “The essence of the written description requirement is that a patent applicant,
10 as part of the bargain with the public, must describe his or her invention so that the
11 public will know what it is and that he or she has truly made the claimed
12 invention.” *AbbVie Deutschland GmbH & Co. v. Janssen Biotech*, 759 F.3d 1285,
13 1298 (Fed. Cir. 2014). The written description requirement “serves a teaching
14 function, as a *quid pro quo* in which the public is given meaningful disclosure in
15 exchange for being excluded from practicing the invention for a limited period of
16 time.” *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 922 (Fed. Cir. 2004)
17 (citation omitted). Courts enforce the written description requirement to “ensure
18 that the scope of the right to exclude, as set forth in the claims, does not overreach
19 the scope of the inventor’s contribution to the field of art as described in the patent
20 specification.” *Reiffin v. Microsoft*, 214 F.3d 1342, 1345 (Fed. Cir. 2000).
21 Therefore, it is critical that the specification provide written description of the full
22 scope of the claims. *See Chiron v. Genentech*, 363 F.3d 1247, 1259 (Fed. Cir.
23 2004) (“An application satisfies the written description requirement if persons of
24 ordinary skill in the art at the time the application was filed would recognize from
25 the application that the inventor actually invented the full scope of the invention as
26 finally claimed in the patent.”); *Crown Operations Int’l v. Solutia*, 289 F.3d 1367,
27 1380 (Fed. Cir. 2002) (“[T]he novel aspects of the invention must be disclosed and
28 not left to inference, that is, a patentee may not rely on inference of a person of

1 ordinary skill in the pertinent art to supply such novel aspects”).

2 The “enablement requirement is satisfied when one skilled in the art, after
3 reading the specification, could practice the claimed invention without undue
4 experimentation.” *Auto. Techs.*, 501 F.3d at 1282. “It is the specification, not the
5 knowledge of one skilled in the art, that must supply the novel aspects of an
6 invention in order to constitute adequate enablement.” *Genentech*, 108 F.3d at
7 1366. The patentee is “required to provide an adequate enabling disclosure in the
8 specification; it cannot simply rely on the knowledge of a person of ordinary skill to
9 serve as a substitute for the missing information in the specification.” *Alza v. Andrx*
10 *Pharms.*, 603 F. 3d 935, 940-41 (Fed. Cir. 2010). “A patentee who chooses broad
11 claim language must make sure the broad claims are fully enabled.” *Sitrick*, 516
12 F.3d at 999-1000.

13 The claims in a later-filed application can take advantage of the filing date of
14 an earlier application (and thus avoid prior art arising between the applications)
15 only if the earlier application complies with the requirements of section 112.
16 *Tronzo v. Biomet*, 156 F.3d 1154, 1158 (Fed. Cir. 1998) (“For a claim in a later-
17 filed application to be entitled to the filing date of an earlier application under 35
18 U.S.C.A. § 120, the earlier application must comply with the written description
19 requirement of 35 U.S.C.A. § 112, ¶ 1.”); *Anascope*, 601 F.3d at 1335-37; *Tech.*
20 *Licensing v. Videotek*, 545 F.3d 1316, 1326 (Fed. Cir. 2008).

21 **e. Invention date**

22 In order to claim a pre-filing invention date, a plaintiff must “show that it
23 was the first to conceive the invention and that it exercised reasonable diligence in
24 later reducing that invention to practice.” *Mahurkar v. C.R. Bard*, 79 F.3d 1572,
25 1577 (Fed. Cir. 1996). “To have conceived of an invention, an inventor must have
26 formed in his or her mind ‘a definite and permanent idea of the complete and
27 operative invention, as it is hereafter to be applied in practice.’” *Id.* (quoting
28 *Burroughs Wellcome v. Barr Labs.*, 40 F.3d 1223, 1228 (Fed. Cir. 1994)). “The

1 idea must be ‘so clearly defined in the inventor’s mind that only ordinary skill
 2 would be necessary to reduce the invention to practice, without extensive research
 3 or experimentation.’” *Id.* (quoting *Burroughs Wellcome*, 40 F.3d at 1228). To
 4 show reasonable diligence, a plaintiff must account for the entirety of the critical
 5 period with specific details. *See In re Mulder*, 716 F.2d 1542, 1545 (Fed. Cir.
 6 1983) (failure to show diligence during a two-day critical period was fatal).

7 In addition to showing conception and diligence requirements, “[t]he
 8 inventor must provide independent corroborating evidence in addition to his own
 9 statements and documents.” *Procter & Gamble v. Teva Pharms. USA*, 566 F.3d
 10 989, 999 (Fed. Cir. 2009) (citation and internal quotation omitted) (“unwitnessed”
 11 notebook entry cannot establish invention date); *In re Jolley*, 308 F.3d 1317, 1328
 12 (Fed. Cir. 2002) (“corroboration is required to support an inventor’s testimony
 13 regarding his reasonable diligence in pursuit of the invention”); *Kenexa Brassring*
 14 *v. Taleo*, 751 F. Supp. 2d 735, 755 (D. Del. 2010) (“[T]o prove both conception and
 15 reduction to practice, an alleged prior inventor ‘must provide independent
 16 corroborating evidence in addition to his own statements and documents.’”) (citation omitted).

18 Corroboration requires “evidence showing what the inventor has disclosed to
 19 others.” *Cordance v. Amazon.com*, 658 F.3d 1330, 1334 (Fed. Cir. 2011) (citation
 20 omitted) (emphasis added). “[A]n inventor’s own unwitnessed documentation does
 21 not corroborate an inventor’s testimony about inventive facts.” *Brown v. Barbacid*,
 22 276 F.3d 1327, 1335 (Fed. Cir. 2002) (“The inventive facts must not rest alone on
 23 testimonial evidence from the inventor himself.”); *Alexsam v. Gap*, 621 F. App’x
 24 983, 992 (Fed. Cir. 2015). Corroboration “provides a bright line for both district
 25 courts and the PTO to follow in addressing the difficult issues related to invention
 26 dates.” *Mahurkar*, 79 F.3d at 1577; *Monolithic Power Sys. v. O2 Micro Int’l*, No.
 27 08-4567, 2010 WL 583960, at *8-9 (N.D. Cal. Feb. 16, 2010).

28 Odyssey has mistakenly argued that Karabinis’ notebook “alone” is enough

and the “rule of reason” saves its “unwitnessed” notebook. (Dkt. 287 (MSJ Opp. at 23, 25).) But “the ‘rule of reason’ analysis does not alter the requirement of corroboration of an inventor’s testimony.” *Singh v. Brake*, 317 F.3d 1334, 1341-43 (Fed. Cir. 2003) (notebook insufficient to corroborate inventor’s testimony); *Stern v. Trs. of Columbia Univ.*, 434 F.3d 1375, 1378 (Fed. Cir. 2006) (“unwitnessed laboratory notebooks on their own are insufficient”); *Reese v. Hurst*, 661 F.2d 1222, 1231 (C.C.P.A. 1981) (“notebooks are accorded no more weight than the inventors’ testimony in this instance, since they were not witnessed or signed”); *Alexsam*, 621 F. App’x at 995 (patentee unable to show an earlier conception date because it had no corroborating evidence); *Stamps.com v. Endicia*, 437 F. App’x 897, 908 (Fed. Cir. 2011) (to safeguard against fraud, inventor “claiming prior conception must proffer evidence corroborating his testimony”).

2. Material facts

a. The asserted claims

After Plaintiff Odyssey dropped scores of asserted claims and one asserted patent in its entirety, the following claims from five patents remain in the suit:

U.S. Patent No.	Asserted Claims
7,881,393	4 (depends from 1) 18 (depends from 15)
8,199,837	1, 6, 11, 14 (independent) 21 (depends from 17) 27 (depends from 22)
8,576,940	2 (depends from 1) 11 (depends from 10)
8,855,230	11 (depends from 1) 22 (depends from 12) 31 (depends from 23) 42 (depends from 34) 50 (depends from 45) 64 (depends from 58)

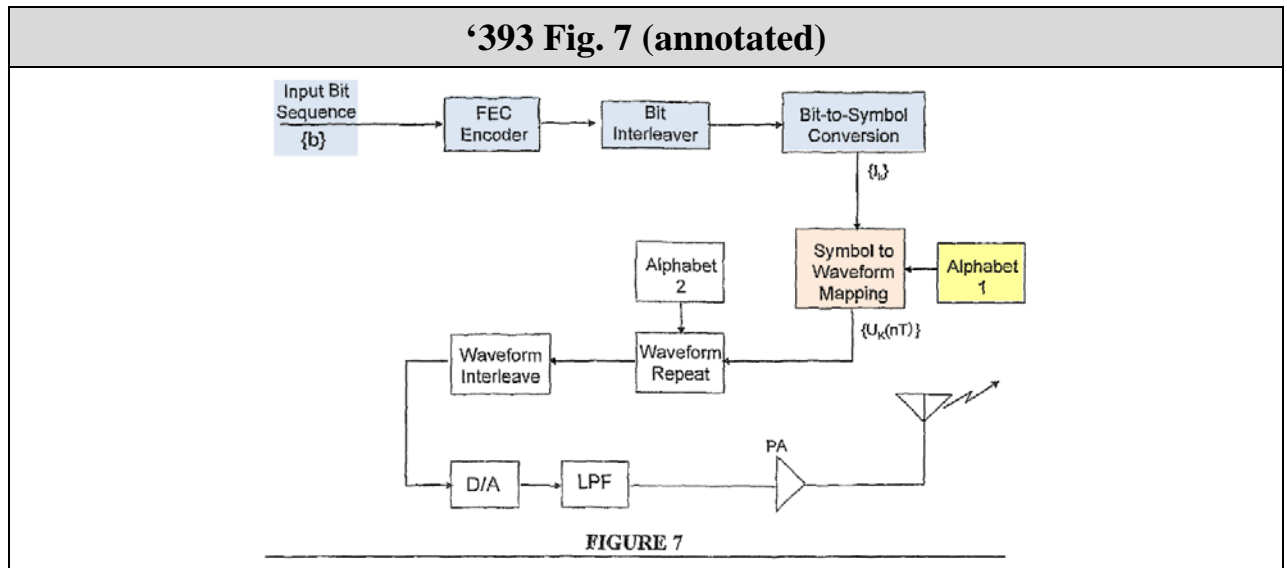
U.S. Patent No.	Asserted Claims
8,879,606	4 (depends from 1) 17 (depends from 14) 30 (depends from 27) 44 (depends from 40)

b. The teachings of the claims of the patents-in-suit

The five patents-in-suit arise from applications that purport to claim priority to provisional applications filed in June 2005, July 2005, and March 2008. The patents-in-suit describe a “signaling alphabet” made up of waveforms. (‘393 col. 2:16-43 (Summary of the Invention); ‘393 col. 19:55-20:15.) Figure 1 from the patents-in-suit shows “generat[ing] a communications alphabet comprising M distinct pseudo-random, non-cyclostationary, orthogonal and/or orthonormal waveforms.” (‘393 Fig. 1, col. 20:21-21:52; ‘393 Fig. 3, col. 20:66-21:3.) Fig. 8 notes that certain frequency intervals may be excluded from the waveforms included in the waveform alphabet. (‘393 Fig. 8, col. 24:44-64) Three of the patents-in-suit also include Figure 17. (‘393, ‘230, ‘606 patents, Fig. 17.) Figure 17 depicts a “cognitive” embodiment in which the channel conditions of a band of frequencies are analyzed using a Fourier transform, and water-filling is used to form a desired spectrum shape for the waveforms in the waveform alphabet. (‘393 Fig. 17, col. 30:5-53.)

The patents-in-suit use the waveform alphabet to map information symbols onto waveforms. Figure 7 shows a transmitter path using the waveform alphabet. (‘393 Fig. 7, col. 24:18-27; *see also* ‘393 Fig. 5, col. 23:29-54; ‘393 Fig. 17, col. 30:5-31:27.) The waveform alphabet is used to map each information symbol onto a corresponding waveform from the waveform alphabet. (‘393 Fig. 4, col. 22:40-49 (“[A]n information symbol I_k ... having one of M possible information values $\{I_1, I_2, \dots, I_M\}$, may be mapped onto one of the M waveforms of the alphabet $\{U_1(nT),$

1 $U_2(nT)$, [...] $U_M(nT)$ } For example, in some embodiments, if $I_k = I_2$, then during
 2 the k^{th} signaling interval the waveform $U_2(nT)$ may be transmitted"); '393 col.
 3 22:37-65.)



15 c. Person of ordinary skill

16 A person of ordinary skill in the art of the patents-in-suit is a person with at
 17 least a master's degree in electrical engineering with approximately 3-4 years of
 18 practical experience in wireless communications, or the equivalent thereof.

19 d. The prior art invalidates the asserted claims.

20 A variety of prior art references teach the alleged inventions recited in the
 21 asserted claims. For example, the Pickering reference (U.S. Patent No. 6,408,019)
 22 teaches a "noise communication system" for use in both commercial and military
 23 systems to transmit "secret" information. (E.g., Pickering, abstract, col. 1:22-32,
 24 3:52-4:37.) Pickering is titled "System and Method for Communication Using
 25 Noise," was filed on December 23, 1998, and issued on June 18, 2002, more than
 26 one year before the earliest application in the family of the patents-in-suit.
 27 Pickering is discussed in detail in the Acampora invalidity report, including
 28 Appendix A and throughout the main body of his report, with claim-by-claim and

1 limitation-by-limitation mapping shown in the claim mapping chart for the ‘940
2 patent. The rebuttal report of Odyssey’s expert presents arguments that misread
3 Pickering. The report also relies on belated and mistaken claim construction
4 arguments regarding the frequency-content and bandwidth limitations that conflict
5 with Odyssey’s infringement, damages, and priority-date theories.

6 The Andren reference (U.S. Patent No. 5,029,184) teaches a water-filling
7 method that closely tracks the “cognitive” water-filling method described in three
8 of the patents-in-suit and covered by Odyssey’s asserted claims. (*E.g.*, Andren,
9 Fig. 2, col. 5:44-6:51, claims 4, 7, 14, 16, 25.) Andren is titled “Low Probability of
10 Intercept Communication System,” was filed on January 24, 1990, and issued on
11 July 2, 1991, more than one year before the earliest application in the family of the
12 patents-in-suit. Andren is discussed in detail in the Acampora invalidity report,
13 including Appendix B and throughout the main body of his report, with claim-by-
14 claim and limitation-by-limitation mapping shown in the claim mapping charts for
15 the patents-in-suit. Dr. Andren’s anticipated trial and deposition testimony may
16 further explain the teachings of the Andren reference. In addition, further context
17 regarding the Andren reference may be provided by reference to the additional
18 documents produced by Andren and with respect to later references in the series of
19 military references based on Andren, such as Swackhammer and Nunez. The
20 rebuttal report of Odyssey’s expert presents arguments that misread Andren. The
21 report also relies on belated and mistaken claim construction arguments regarding
22 the waveform alphabet, bandwidth, and frequency limitations that conflict with
23 Odyssey’s infringement, damages, and priority-date theories.

24 The Swackhammer reference is “Performance Simulation of a Transform
25 Domain Communication System for Multiple Access Applications” by Patrick J.
26 Swackhammer, Michael A. Temple, and Richard A. Raines, IEEE Military
27 Communications Conference Proceedings, 1999 (MILCOM 1999), Volume 2, pp.
28 1055-59. Swackhammer was published more than one year before the earliest

1 application in the family of the patents-in-suit. Swackhammer is discussed in detail
2 in Appendix C of the Acampora invalidity report and throughout the main body of
3 his report, with claim-by-claim and limitation-by-limitation mapping shown in the
4 claim mapping charts for the patents-in-suit. The rebuttal report of Odyssey's
5 expert presents materially similar arguments for Swackhammer as he presents for
6 Andren, which fail for the same reasons.

7 The Nunez reference is "Interference Suppression in Multiple Access
8 Communications Using M-ary Phase Shift Keying Generated Via Spectral
9 Encoding," a Master's thesis submitted by Captain Abel Sanchez Nunez, to the Air
10 Force Institute of Technology, all pages (March 2004). Nunez was published
11 before the earliest application in the family of the patents-in-suit. Nunez is
12 discussed in detail in Appendix D of the Acampora invalidity report and throughout
13 the main body of his report, with claim-by-claim and limitation-by-limitation
14 mapping shown in the claim mapping charts for the patents-in-suit. The rebuttal
15 report of Odyssey's expert presents materially similar arguments for Nunez as he
16 presents for Andren, which fail for the same reasons.

17 The prior art also includes a rich and deep disclosure of "OFDM"
18 (Orthogonal Frequency Division Multiplexing) references, preceding the patents-in-
19 suit by many decades. The prior art includes articles providing the foundation for
20 OFDM systems by Shannon, Chang, and Weinstein, each of which were published
21 more than three decades before Odyssey's patents. As digital processing power and
22 techniques for performing Fourier transforms advanced, OFDM-based systems
23 became more prevalent, including high-speed modems in the mid-1980s, DSL
24 systems in the 1990s, and the Wi-Fi and WiMAX wireless standard in the early
25 2000s.

26 One example of a wireless OFDM system proposed in the 1990s is the
27 Frodigh reference (U.S. Patent No. 5,726,978), which was filed in 1995. Frodigh is
28 titled "Adaptive Channel Allocation in a Frequency Division Multiplexed System,"

1 was filed on June 22, 1995, and issued on March 10, 1998, more than one year
2 before the earliest application in the family of the patents-in-suit. Frodigh is
3 discussed in detail in the Acampora invalidity report, including Appendix E and
4 throughout the main body of his report, with claim-by-claim and limitation-by-
5 limitation mapping shown in the claim mapping charts for the patents-in-suit.
6 Frodigh teaches the same benefits of “dynamic allocation” that Odyssey seeks to
7 take credit for in its expert reports, including providing more bandwidth to users
8 that need higher data rates, providing less bandwidth to users with lower or no data
9 rate needs, and adjusting the allocated frequencies based on measuring channel
10 conditions using a Fourier transform. The rebuttal report of Odyssey’s expert
11 presents arguments that misread Frodigh. The report also relies on belated and
12 mistaken claim construction arguments regarding the bandwidth, frequency, and
13 desired spectrum shape limitations that conflict with Odyssey’s infringement,
14 damages, and priority-date theories.

15 The Mitsubori reference (Japanese Pub. No. H11-215095) also dynamically
16 varied frequencies and bandwidths in an OFDM system in response to channel
17 conditions measured using a Fourier transform. Mitsubori is titled “OFDM Signal
18 Transmission Device” and was published on August 6, 1999, more than one year
19 before the earliest application in the family of the patents-in-suit. Mitsubori is
20 discussed in detail in the Acampora invalidity report, including Appendix F and
21 throughout the main body of the report, with claim-by-claim and limitation-by-
22 limitation mapping shown in the claim mapping charts for the patents-in-suit. The
23 rebuttal report of Odyssey’s expert presents arguments that misread Mitsubori. The
24 report also relies on belated and mistaken claim construction arguments regarding
25 the bandwidth and waveform alphabet limitations that conflict with Odyssey’s
26 infringement, damages, and priority-date theories.

27 In the mid-1990s, the “ETSI” (European Telecommunications Standards
28 Institute) standards body began working on a third generation (3G) cellular

1 standard. (ETSI 1997 at 5-6.) ETSI formed several “Concept Groups” that
 2 developed proposals for the air interface portion of the standard. (ETSI 1997 at 6.)
 3 The collection of proposals was published in December 1997 in TR 101 146
 4 V3.0.0, titled “Universal Mobile Telecommunications System (UMTS); UMTS
 5 Terrestrial Radio Access (UTRA); Concept evaluation.” (ETSI 1997 at 1.) ETSI
 6 1997 was published on the ETSI website and remains available for download to this
 7 date.¹ ETSI 1997 is discussed in detail in the Acampora invalidity report, including
 8 Appendix G and throughout the main body of his report, with claim-by-claim and
 9 limitation-by-limitation mapping shown in the claim mapping charts for the
 10 patents-in-suit. ETSI 1997 was an example of an OFDM system designed to
 11 include the uplink of a cellular system. The rebuttal report of Odyssey’s expert
 12 presents arguments that misread ETSI 1997. The report also relies on belated and
 13 mistaken claim construction arguments regarding the bandwidth, frequency, and
 14 frequency-content limitations that conflicts with Odyssey’s infringement, damages,
 15 and priority-date theories.

16 The prior art also discloses a variety of references that teach using a Fourier
 17 transform to “spread” or “pre-code” data in the context of an OFDM system. One
 18 example is the series of references resulting in the Galda reference. The Galda
 19 reference includes Dirk Galda and Hermann Rohling as authors, is titled “A Low
 20 Complexity Transmitter Structure for OFDM-FDMA Uplink Systems,” and was
 21 published in the IEEE Vehicular Technology Conference in Spring 2002. Galda
 22 was published more than one year before the earliest application in the family of the
 23 patents-in-suit. Galda is discussed in detail in Appendix I of the Acampora
 24 invalidity report and throughout the main body of his report, with claim-by-claim
 25 and limitation-by-limitation mapping shown in the claim mapping charts for the

26
 27 ¹ E.g., https://portal.etsi.org/webapp/workProgram/Report_Schedule.asp?WKI_ID=6272 (also available via a “Standards” search from the ETSI home page,
 28 www.etsi.org).

1 patents-in-suit. Galda arose out of a series of publications relating to Fourier
2 transform precoding authored by members of the same research group. These
3 related publications include the Bruninghaus reference (Karsten Bruninghaus and
4 Hermann Rohling, Multi-Carrier Spread Spectrum and Its Relationship to Single-
5 Carrier Transmission, published by the IEEE in 1998), the Galda presentation (Dirk
6 Galda, Hermann Rohling, Elena Costa, Harald Haas, and Egon Schulz, Broadband
7 OFDM-FDMA system for the Uplink of a Wireless LAN, presented in 2001), and
8 the Costa patent (U.S. Patent No. 7,738,571, Elena Costa, Dirk Galda, Harald Haas,
9 Hermann Rohling, Egon Schulz, Method and Communication System Device for
10 the Generation or Processing of OFDM Symbols in a Transmission System with
11 Spread User Data, published March 27, 2003). The rebuttal report of Odyssey's
12 expert misreads the Galda reference, both by itself and in the context of the prior art
13 from which it arose. The report also relies on belated and mistaken claim
14 construction arguments regarding the bandwidth and frequency limitations of the
15 patents-in-suit that conflict with Odyssey's infringement, damages, and priority-
16 date theories.

17 The Fazel reference is a textbook that provides detailed teachings regarding
18 the use of Fourier transform precoding in OFDM systems. Fazel is titled "Multi-
19 Carrier and Spread Spectrum Systems" and was published in 2003, more than one
20 year before the earliest application in the family of the patents-in-suit. Fazel is
21 discussed in detail in Appendix H of the Acampora invalidity report and through
22 the main body of his report, with claim-by-claim and limitation-by-limitation
23 mapping shown in the claim mapping charts for the patents-in-suit. The rebuttal
24 report of Odyssey's expert presents arguments that misread Fazel. The report also
25 relies on belated and mistaken claim construction arguments regarding the
26 bandwidth and frequency limitations that conflict with Odyssey's infringement,
27 damages, and priority-date theories.

28 The prior art further includes a variety of references directly related to the

1 LTE standardization process. One example is the Motorola reference, which is
2 titled “Uplink Multiple Access for EUTRA,” bears the document number R1-
3 050245, and was published by March 30, 2005, as part of the ETSI proceedings that
4 resulted in the LTE standard. Other LTE proposals related to the Motorola
5 reference include the publication 3GPP R1-050584 (R1-050584) by Motorola
6 entitled “EUTRA Uplink Numerology and Design,” submitted on June 15, 2005,
7 and the publication 3GPP R1-050588 (R1-050588) by NTT DoCoMo, Fujitsu,
8 Mitsubishi Electric, and SHARP, submitted on June 16, 2005. Motorola was
9 published before the earliest application in the family of the patents-in-suit.
10 Motorola is discussed in detail in Appendix J of the Acampora invalidity report and
11 throughout the main body of his report, with claim-by-claim and limitation-by-
12 limitation mapping shown in the claim mapping charts for the patents-in-suit. The
13 rebuttal report of Odyssey’s expert presents arguments that misread the Motorola
14 reference. The report also relies on belated and mistaken claim construction
15 arguments regarding the bandwidth and frequency limitations that conflict with
16 Odyssey’s infringement, damages, and priority-date theories.

17 The Myung reference is titled “Single Carrier FDMA for Uplink Wireless
18 Transmissions” and was published by the IEEE in September 2006. Myung was
19 published before the March 2008 provisional application in the family of the
20 patents-in-suit. Because the asserted claims are not entitled to an earlier effective
21 filing date, Dr. Myung’s 2006 paper and Dissertation are 102(b) prior art. Dr.
22 Myung’s anticipated trial and deposition testimony may further explain the
23 teachings of the Myung reference. Dr. Myung’s paper also relates to several
24 additional documents authored by Dr. Myung, including his thesis, textbook, and
25 patent. The Myung reference is discussed in detail in Appendix K of the Acampora
26 invalidity report and throughout the main body of his report, with claim-by-claim
27 and limitation-by-limitation mapping shown in the claim mapping charts for the
28 patents-in-suit. The rebuttal report of Odyssey’s expert does not contest that

1 Myung invalidates all the asserted claims if it is prior art; the only question is the
2 effective filing date.

3 The December 2007 LTE references refer to a group of sections from the
4 draft LTE standard, which were published by December 2007. These references
5 also teach the accused features and were published before the March 2008
6 provisional application in the family of the patents-in-suit. The rebuttal report of
7 Odyssey's expert also fails to contest that any limitation is missing from the
8 December 2007 LTE references if they are prior art.

9 The Acampora invalidity report discusses a number of additional references,
10 which may be used to describe the state of the art and in combinations with the
11 references described above. For example, the following are some of the many
12 references that teach varying bandwidths and frequencies and may be combined
13 with the references noted above: Bugeja (U.S. Patent App. Pub. No.
14 US2002/017446)), Yellin (U.S. Patent No. 7,660,289), Mattison (U.S. Patent No.
15 6,246,713), Chow (U.S. Patent No. 5,479,447), and Larrick (U.S. Patent No.
16 6,026,125).

17 The references described above, individually and in the combinations recited
18 in the Acampora invalidity report, anticipate the asserted claims and render them
19 obvious. For example, certain combinations are summarized in paragraph 23 of the
20 Acampora invalidity report, the appendices to the report, and throughout the main
21 body of the report.

22 **e. Secondary considerations further confirm the**
23 **obviousness of the asserted claims.**

24 The evidence of secondary considerations supports a finding of obviousness
25 in this case and, in any event, Odyssey cannot overcome Apple's strong showing of
26 invalidity. The references discussed above show that the asserted claims were
27 already known in the prior art. For example, the record does not show any evidence
28 of failed efforts by others to develop the subject matter of the asserted claims or a

1 long-felt but unmet need, but instead shows repeated, successful disclosures of the
2 same features that Odyssey claims to have invented. Odyssey points to the
3 commercial success of the accused products, but that commercial success is due to
4 the contributions of Apple and others and has no nexus to Odyssey's asserted
5 claims. Moreover, no one has praised Dr. Karabinis for anything related to LTE,
6 but instead he has met with repeated failures in obtaining funding related to the
7 subject matter of his patents.

8 **f. The asserted claims are not entitled to a pre-filing**
9 **invention date.**

10 No independent record evidence corroborates either conception or continuous
11 diligence, and Odyssey does not allege an actual reduction to practice before filing.
12 As detailed in the Acampora invalidity report, the notebook entries Odyssey has
13 cited do not provide evidence showing a complete conception of each limitation of
14 the asserted claims. Moreover, Odyssey has identified no independent, admissible,
15 corroborating evidence of complete conception. During the summary judgment
16 briefing, Odyssey cited a declaration by Raj Singh and a letter purported sent from
17 Dr. Karabinis to his son. Neither of these pieces of evidence show the disclosure of
18 a completed thought expressed in such clear terms as to enable those skilled in the
19 art to make the invention. Moreover, neither piece of evidence is admissible in the
20 trial because neither potentially corroborating witness was identified for trial by
21 Odyssey in its initial disclosures.

22 Odyssey also has no evidence of diligence. To the contrary, even if
23 Karabinis' unwitnessed notebook entries mattered (they do not), they account for
24 only 8 days out of the 1,143-day span between the alleged conception in May 2002
25 and the June 2005 provisional application. Moreover, neither piece of allegedly
26 corroborating evidence noted above provides corroboration of any diligence or is
27 admissible at trial.
28

g. The asserted claims are not entitled to claim priority before March 2008.

The asserted ‘230, ‘393, ‘606, and ‘940 claims are also not entitled to claim priority before the March 2008 provisional application. Before that date, Odyssey had not disclosed a variety of claimed features, including “providing a frequency content by Fourier transforming a signal” (as in ‘606 claims 4, 17, 30, 44, and ‘393 claims 4, 18), or “using a Fourier transform and an inverse Fourier transform” (as in ‘230 claims 11, 22, 31, 42, 50, 64). For example, the pre-2008 applications did not disclose the use of Fourier transforms and inverse Fourier transforms as claimed in the asserted claims. The 2008 application added an embodiment showing the use of an FFT (‘393, ‘230, and ‘606 Fig. 17) to provide a frequency content, but the pre-2008 applications did not. Thus, all of the asserted ‘230, ‘393, and ‘606 claims are limited to 2008 filing date, at the earliest.

Likewise, the 2008 application added a discussion of the use of a “control channel” that was not present in any of the earlier applications, which lacked written description support for the full scope of the alleged “dynamic resource allocation” features of all of the claims. (*See, e.g.*, “vary a bandwidth without resorting to chipping” (as in ‘940 claims 2 and 11).) To the extent that Odyssey relies on new matter added to the ‘940 patent on February 28, 2013 for specification support, the asserted ‘940 claims are not entitled to claim priority before February 28, 2013. The 2013 amendments added a new summary, including additional discussion of varying the bandwidth of a waveform sequence, and an allegation that the disclosed invention is relevant to 4G LTE. None of that information can be credited towards the filing date.

h. The asserted claims are also invalid under 35 U.S.C. § 112.

The asserted claims are also invalid under 35 U.S.C. §112, because the patents-in-suit do not teach the full scope of the asserted claims. The disclosures of the patents-in-suit are focused on covert communications, expressly distinguishing

1 the alleged invention from conventional systems. (*E.g.*, ‘393 col. 1:40-54 (Field of
 2 the Invention) (“This invention relates to low interference, high privacy, featureless
 3 covert communications systems and/or methods that may also comprise cognitive
 4 capability.”); ‘393 col. 19:1-25 (asserting that “[c]onventional communication
 5 systems” – such as GSM and CDMA-based systems like CDMA2000 or WCDMA
 6 – are undesirable for covert communications, because they use “waveforms that are
 7 substantially cyclostationary.”); *id.*, col. 18:50-59; ‘393 col. 19:64-20:15 (asserting
 8 that a “sophisticated interceptor” could use a device called a “cyclic periodogram”
 9 to detect the presence of cyclostationary communications).) To achieve covertness,
 10 the patents-in-suit describe an alleged invention that uses non-cyclostationary,
 11 pseudo-random, and orthonormal waveform alphabets. The patents-in-suit do not
 12 describe a conventional, non-covert system or suggest to a person of skill in the art
 13 that Dr. Karabinis possessed an invention directed to conventional, non-covert
 14 systems.

15 In addition, the specifications of the patents-in-suit have no description of the
 16 specific features of the conventional, non-covert system Odyssey has accused in
 17 this case. For example, Odyssey has accused the Fourier transform precoding used
 18 in LTE of infringing the frequency-content limitations in the asserted claims, but
 19 the specifications do not describe any alleged invention in which a Fourier
 20 transform is performed on the data to be transmitted. Thus, all of the claims that
 21 broadly recite “using a Fourier transform” or “providing a frequency content by
 22 Fourier transforming a signal” or encompass similarly broad claim scope are
 23 invalid. Odyssey has not sought a narrowing construction of such terms and has to
 24 the contrary argued that the claims encompass any use of a Fourier transform, no
 25 matter how distinctly different that use may be.

26 Likewise, Odyssey has pointed to the resource element mapper in LTE as
 27 infringing the limitations directed to “forming a desired spectrum shape” and
 28 “varying the frequencies and bandwidths.” This application of the claims extends

beyond any specification support and renders the claims invalid. The patents-in-suit describe these operations as separate and distinct from any operation performed on data—the spectrum shape is “desired” without reference to any data. The patents-in-suit do not describe any alleged invention in which the “shape” of the spectrum is “formed” in any respect by the data itself.

B. Noninfringement (Civ. L.R. 16.1.f.3.e(3))

Evidence regarding noninfringement will be presented from a variety of sources, including exhibits and witness testimony. Witnesses that may testify regarding noninfringement issues, such as the operation of the accused products and the LTE standard, include the expert witnesses Dr. Anthony Acampora, Dr. Benjamin Goldberg, and on cross-examination, Odyssey’s expert Dr. Mung Chiang. Several fact witnesses may also testify regarding noninfringement issues, including Dr. Hyung Myung, Sachin Sane, and Sami Almalfouh.

Apple provides the following short summary regarding noninfringement. In addition, the disclosures from Apple’s expert reports, its discovery responses, its briefing, and the depositions of the witnesses identified above are incorporated by reference.

1. Points of law

a. Literal infringement

The patentee must establish infringement by a preponderance of the evidence. *Braun v. Dynamics*, 975 F.2d 815, 819 (Fed. Cir. 1992). “To establish literal infringement, every limitation set forth in a claim must be found in an accused product, exactly.” *Southwall Tech. v. Cardinal IG*, 54 F.3d 1570, 1575 (Fed. Cir. 1995). Direct infringement of a method claim requires the performance of every step in the claimed method. *Joy Techs. v. Flakt*, 6 F.3d 770, 775 (Fed. Cir. 1993) (“The sale of the apparatus is not a sale of the method. A method claim is directly infringed only by one practicing the patented method.”) (emphasis in original).

b. Infringement under the doctrine of equivalents

“The doctrine of equivalents is not a talisman that entitles a patentee to a jury trial on the basis of suspicion; it is a limited remedy available in special circumstances, the evidence for which is the responsibility of the proponent.” *Schoell v. Regal Marine*, 247 F.3d 1202, 1210 (Fed. Cir. 2001). The Federal Circuit requires “particularized testimony and linking argument” to support any equivalents allegation. *Texas Instruments v. Cypress Semiconductor*, 90 F.3d 1558, 1567-68 (Fed. Cir. 1996). The patentee must present evidence explaining “how” and “why the function and the result were the same.” *Texas Instruments*, 90 F.3d at 1568. Patentees cannot “under the guise of applying the doctrine of equivalents, erase a plethora of meaningful structural and functional limitations of the claim on which the public is entitled to rely.” *Gemalto v. HTC*, 754 F.3d 1364, 1373-74 (Fed. Cir. 2014); *Mirror Worlds v. Apple*, 692 F.3d 1351, 1358 (Fed. Cir. 2012) (concluding that “conclusory statements” by expert were insufficient to satisfy the doctrine of equivalents burden); *Bid for Position v. AOL*, 601 F.3d 1311, 1318-19 (Fed. Cir. 2010).

c. Inducement of infringement

To establish induced infringement, the patentee first must prove that specific acts of direct infringement by third parties occurred. *Limelight Networks v. Akamai Techs.*, 134 S. Ct. 2111, 2117 (2014). The patentee must also provide affirmative acts to induce infringement and proof that the accused infringer knew that the accused actions would infringe the patents-in-suit. *Commil USA v. Cisco Sys.*, 135 S. Ct. 1920, 1926 (2015). The “sale of a lawful product by lawful means, with the knowledge that an unaffiliated, third party may infringe, cannot, in and of itself, constitute inducement of infringement.” *Dynacore Holdings v. U.S. Philips*, 363 F.3d 1263, 1276 n.6 (2004) (citations omitted). Nor will instructions from an alleged infringer alone support a finding of inducement absent an affirmative intent to promote infringement, as “describing” is not the same as “encouraging” or

“promoting” an allegedly infringing use. *Takeda Pharm. U.S.A. v. West-Ward Pharm.*, 785 F.3d 625, 630-31 (Fed. Cir. 2015) (internal citations omitted).

2. Material facts

a. The accused Apple products.

Odyssey has accused the following Apple iPhones and iPads:

iPhones	iPads
iPhone 5	iPad 3
iPhone 5s	iPad 4
iPhone 5c	iPad Air
iPhone 6	iPad Air 2
iPhone 6 Plus	iPad Mini
iPhone 6s	iPad Mini 2
iPhone 6s Plus	iPad Mini 3
iPhone SE	iPad Mini 4
	iPad Pro

b. The accused Apple products do not literally infringe.

As described in Apple’s briefing, discovery responses, and expert reports, the accused Apple products do not infringe the asserted claims. Apple provides the following short summary regarding some of the reasons why the accused Apple products do not infringe.

The Court has construed nearly all of the asserted claims as requiring the use of a “waveform alphabet.” (*E.g.*, ‘393 claims 4, 18; ‘837 claims 1, 6, 11, 14, 21, 27; ‘940 claims 2, 11; ‘230 claims 11, 22, 31, 42, 50, 64; ‘606 claims 4, 30.) The accused Apple products do not use a waveform alphabet. Instead, the LTE uplink uses a fundamentally different method for generating the waveforms to be transmitted wirelessly over the air. Numerous steps preclude the correspondence between data and waveforms required by a waveform alphabet and the Court’s constructions. Fourier transform precoding precludes any correspondence between the symbols output from the modulation mapper and the waveforms ultimately

1 transmitted from the device. Resource element mapping, including the allocation of
2 frequencies from the base station, further precludes any correspondence between
3 the data and the transmitted waveforms. Unlike a waveform alphabet in which the
4 amplitudes and frequencies of the waveform are chosen by the data, the LTE uplink
5 does not use the data to select the frequencies used for transmission. Instead, the
6 frequencies are selected by the base station, independent of the data, and provided
7 to the end-user device. In the LTE uplink, the data corresponds to only amplitude
8 and phase, not to frequency. In addition, the accused Apple products do not choose
9 or assign an information symbol to a waveform using a waveform alphabet, as
10 required by the Court's constructions.

11 Each asserted claim from the '393 and '606 patents recites a limitation
12 directed to "providing a frequency content for a waveform by Fourier transforming
13 a signal." (*E.g.*, '393 claims 4, 18; '606 claims 4, 17, 30, 44.) The Court has
14 construed these related terms as, *e.g.*, "providing a frequency content by subjecting
15 a desired band of frequencies to a Fourier transform." (Dkt. 169 at 17, 24-25.) The
16 accused Apple products do not perform this step. Fourier transform precoding does
17 not take a time-domain signal and produce frequency content. Instead, precoding
18 simply takes data as an input and provides data as an output. In addition, the
19 precoding step in LTE does not perform a Fourier transform on a desired band of
20 frequencies, because the data has not yet been routed to any frequencies at the
21 accused stage of the LTE uplink.

22 Several claims in the '837, '230, and '606 patents recite a limitation directed
23 to "selecting a frequency interval over which the waveform is to exist." ('837
24 claims 21, 27; '230 claims 50, 64; '606 claims 17, 44.) In LTE, a device called the
25 eNodeB selects which frequency intervals will be used for transmission and sends
26 signals to the end-user devices dictating which frequency intervals will be used. As
27 a result, the end-user device cannot select the frequency interval over which the
28 waveform is to exist.

1 All asserted claims from the ‘393, ‘837, ‘230, and ‘606 patents require the
 2 use of a “single carrier” for transmission. (*E.g.*, ‘393 claims 4, 18; ‘837 claims 1, 6,
 3 11, 14, 21, 27; ‘230 claims 11, 22, 31, 42, 50, 64; ‘606 claims 4, 17, 30, 44.) But
 4 the LTE uplink employs a multi-carrier air interface in which each symbol
 5 outputted from the Fourier transform precoder is resource mapped onto a different
 6 subcarrier.

7 Each asserted claim also recites a limitation requiring that the bandwidth or
 8 frequencies be varied. (*E.g.*, ‘393 claims 4, 18; ‘837 claims 1, 6, 11, 14, 21, 27;
 9 ‘940 claims 2, 11; ‘230 claims 11, 22, 31, 42, 50, 64; ‘606 claims 4, 17, 30, 44.)
 10 The prior art taught varying frequencies and bandwidth, which was a well-known,
 11 obvious way of attempting to optimize system performance. In his rebuttal report,
 12 Odyssey’s technical expert, Dr. Chiang, argued that the claims require the further
 13 unclaimed limitation of varying the bandwidth or frequencies within a “burst,”
 14 which he argued that the references failed to teach. The accused Apple products
 15 likewise do not vary the bandwidth or frequencies within a burst, as the subcarriers
 16 are held constant throughout an entire transmission time interval (“TTI”). Odyssey
 17 argues that the carriers have the ability to change subcarrier allocations from one
 18 TTI to the next, but cites no evidence that any carrier has done so in a way that
 19 would implicate the claims.

20 **c. Odyssey did not preserve a doctrine-of-equivalents**
 21 **theory.**

22 As detailed in Apple’s motion for summary judgment, Odyssey did not
 23 preserve any theory under the doctrine of equivalents. (Mem., Dkt. 263 at 11-12;
 24 Reply, Dkt. 303 at 5; Response, Dkt. 316.) In its summary judgment order, the
 25 Court declined to reach the issue of equivalents, because it denied the motion for
 26 summary judgment on literal infringement. (Order, Dkt. 322 at 22 n.7.) In
 27 addition, the LTE uplink uses processing that is fundamentally different from, and
 28 not equivalent to, a waveform alphabet.

d. Apple has not induced infringement.

Odyssey has not provided any evidence that could support a claim of induced infringement. For example, as described above, inducement requires a showing that Apple knew that the accused acts would constitute infringement. But Odyssey has cited no evidence that Apple has ever held any such belief. (*E.g.*, Chiang Apple Rpt., ¶ 67 (Dkt. 263, Ex. 9) (providing no citations to record evidence of specific knowledge of infringement and affirmative acts to encourage infringement).) In addition, Odyssey has not identified any specific acts of direct infringement, nor has it alleged that Apple has contributorily infringed.

e. Odyssey did not allege willful infringement.

Because Odyssey did not plead willful infringement, willfulness is not at issue in this trial.

III. ADDITIONAL DISCLOSURES OF MATERIAL FACTS AND LAW (Civ. L.R. 16.1.F.2).

A. General Disclosures (Civ. L.R. 16.1.f.2.a)

1. Damages

Odyssey is not entitled to any damages. In addition, Apple intends to introduce evidence from a variety of sources, including exhibits and witness testimony, relating to Odyssey's damages demands and an appropriate reasonable royalty, if liability were to be found. Witnesses that may testify regarding damages issues—including technical issues relating to the prior art and the accused products and economic and survey-related issues—include the expert witnesses Dr. Anthony Acampora, Dr. Dominique Hanssens, and Dr. Matthew Lynde and, on cross-examination, Dr. Mung Chiang, Dr. Scott Savage, and Roy Weinstein. Several fact witnesses may also testify regarding technical and non-technical damages issues, including Dr. Carl Andren, Frank Casanova, Heather Mewes, Dr. Hyung Myung, Sachin Sane, Sami Almalfouh, Michael Jaynes, Surpiya Gujral, and Dr. Robert Love. In addition, Apple reserves the right to rely on any further testimony arising

1 from the further deposition of Dr. Karabinis ordered by the Court, and a
 2 supplemental rebuttal report responding to the second supplemental report of Mr.
 3 Weinstein, if the supplemental report is permitted.

4 Apple provides the following short summary regarding damages issues. In
 5 addition, the disclosures from Apple's expert reports, its discovery responses, and
 6 the depositions of the witnesses identified above are incorporated by reference.

7 **a. Points of law**

8 In patent-infringement cases, economic damages are determined pursuant to
 9 35 U.S.C. § 284. A patent holder is not entitled to damages that are remote or
 10 speculative. *Wordtech Sys. v. Integrated Networks Sols.*, 609 F.3d 1308, 1318-22
 11 (Fed. Cir. 2010) (finding damages award based only on speculation or guesswork);
 12 *LaserDynamics v. Quanta Computer*, 694 F.3d 51, 69 (Fed. Cir. 2012); *Lucent*
 13 *Techs. v. Gateway*, 580 F.3d 1301, 1340 (Fed. Cir. 2009) (vacating and remanding
 14 jury award as excessive). "The patentee bears the burden of proving damages," and
 15 the patentee must sufficiently tie the expert testimony to the facts of the case.
 16 *Uniloc USA v. Microsoft*, 632 F.3d 1292, 1315 (Fed. Cir. 2011); *Power Integrations*
 17 *v. Fairchild*, 711 F.3d 1348, 1374 (Fed. Cir. 2013) (excluding expert opinion
 18 "based on insufficient data").

19 The Federal Circuit has "held many times [that] using sufficiently
 20 comparable licenses is a generally reliable method of estimating the value of a
 21 patent." *Apple v. Motorola*, 757 F.3d 1286, 1325 (Fed. Cir. 2014) (noting that
 22 "[t]he second *Georgia-Pacific* factor is '[t]he rates paid by the licensee for the use
 23 of other patents comparable to the patent in suit'"), *overruled on other grounds by*
 24 *Williamson v. Citrix Online*, 792 F.3d 1339 (Fed. Cir. 2015); *Ericsson v. D-Link*
 25 *Sys.*, 773 F.3d 1201, 1227 (Fed. Cir. 2014) ("This court has recognized that licenses
 26 may be presented to the jury to help the jury decide an appropriate royalty award.");
 27 *VirnetX v. Cisco Sys.*, 767 F.3d 1308, 1330-31 (Fed. Cir. 2014).

28 Nevertheless, "[m]any considerations other than the value of the

1 improvements patented may induce the payment” of settlement agreements, chief
 2 among them the “avoidance of the risk and expense of litigation.” *Rude v. Westcott*,
 3 130 U.S. 152, 164 (1889) (cited in *LaserDynamics*, 694 F.3d at 77-78)).

4 Proof of damages must be tied to “the claimed invention’s footprint in the
 5 market place.” *ResQNet.com v. Lansa*, 594 F.3d 860, 869 (Fed. Cir. 2010). “When
 6 the accused infringing products have both patented and unpatented features,
 7 measuring this value requires a determination of the value added by such features
 8 The essential requirement is that the ultimate reasonable royalty award must be
 9 based on the incremental value that the patented invention adds to the end product.”
 10 *Ericsson*, 773 F.3d at 1226. “[A]ll expert damages opinions must separate the
 11 value of the allegedly infringing features from the value of all other features.”
 12 *Commonwealth Sci. & Indus. Research Organisation v. Cisco Sys.*, 809 F.3d 1295,
 13 1301 (Fed. Cir. 2015), *cert. denied*, 2016 WL 3032735 (2016). “When a patent is
 14 for an improvement, and not for an entirely new machine or contrivance, the
 15 patentee must show in what particulars his improvement has added to the
 16 usefulness of the machine or contrivance. He must separate its results distinctly
 17 from those of the other parts, so that the benefits derived from it may be distinctly
 18 seen and appreciated.” *Garretson v. Clark*, 111 U.S. 120, 121 (1884).

19 In addition, under Ninth Circuit law, a party proposing to use a survey must
 20 lay a “proper foundation for admissibility,” including establishing that the survey
 21 was both “relevant” and “conducted according to accepted principles.” *Clicks*
 22 *Billiards v. Sixshooters*, 251 F.3d 1252, 1263 (9th Cir. 2001); *Oracle Am. v.*
 23 *Google*, No. 10-3561, 2012 WL 850705, at *10 (N.D. Cal. Mar. 13, 2012);
 24 *NetAirus Techs. v. Apple*, No. 10-3257 (C.D. Cal. Oct. 23, 2013)

25 **b. Material facts**

26 **(1) Odyssey has not shown that its alleged** 27 **inventions provide any value to Apple or its** 28 **customers over the prior art.**

To take this case out of the range of typical patent valuations (which are in

1 the thousands, not hundreds of millions, of dollars), Odyssey needed to present
 2 evidence that its patents made a dramatic difference to Apple and its customers.
 3 That task required a sound technical foundation backed by reliable simulations,
 4 tests, and economic analysis, not mere conjecture—as it is undisputed that many
 5 non-patented factors contribute to LTE’s enhanced speeds.

6 Odyssey and its team of experts and attorneys had many years to conduct
 7 reliable simulations or tests that would show the impact (if any) the alleged
 8 inventions had on Apple’s accused products and its customers. Odyssey’s experts
 9 were aware of reliable scientific and economic techniques that might help quantify
 10 the impact of the alleged inventions. But those techniques would have shown that
 11 the alleged invention had only a de minimis impact on Apple and Apple customers,
 12 and Odyssey did not ask any of its experts to perform them. Instead, Odyssey
 13 offered only the unreliable and mistaken damages approaches addressed in Apple’s
 14 *Daubert* briefing and its expert reports. Moreover, as discussed above, Odyssey’s
 15 damages theories conflict with its validity arguments.

16 Apple also intends to introduce evidence at trial from a variety of sources,
 17 including exhibits and witness testimony, showing that Odyssey’s alleged invention
 18 does not provide any perceptible value to Apple or its customers.

19 (2) Comparable agreements

20 As described in more detail in, for example, Apple’s expert reports and its
 21 briefing, several license agreements Apple has entered into are comparable
 22 agreements that provide a baseline for the jury to consider were it to award any
 23 damages. In contrast, the Motorola settlement agreement is not comparable to the
 24 hypothetical negotiation in this case and should be excluded for the reasons
 25 provided in Apple’s currently pending motions in limine.

26 (3) Smallest-salable-unit analysis and royalty 27 stacking

28 As described in more detail in, for example, Apple’s expert reports and its

briefing, Odyssey also does not properly account for the smallest salable unit. Consistent with Apple's licensing practices, any appropriate measure of damages must consider the smallest salable unit allegedly practicing the asserted claims. Here, the smallest salable unit is the baseband processor, not smartphones or tablets as a whole. In addition, any appropriate measure of damages must also account for royalty stacking from the many patents and other technologies incorporated into a product like a baseband processor.

(4) Odyssey's experts seek to present unreliable opinions that do not provide any basis for evaluating damages.

As described in more detail in, for example, Apple's *Daubert* briefing and the expert reports of Apple's experts Dr. Acampora, Dr. Lynde and Dr. Hanssens, Odyssey's experts seek to offer damages opinions that lack a proper foundation in scientific methodology, the facts of this case, and are flawed in numerous respects.

2. Standing

Apple has previously briefed the issue of standing and incorporates that briefing by reference. (Dkt. 189, 206.) The Court denied Apple's motion "based on a review of the evidence in the record." (Dkt. 216 at 15.) At trial, Apple may introduce further evidence regarding Odyssey's lack of standing, including exhibits and witness testimony, such as testimony on cross-examination from Dr. Karabinis.

a. Points of law

Odyssey lacks standing due to an agreement that automatically assigned away any rights he might have had to the patents-in-suit. Standing may be raised at any stage of the case. *Pandrol USA v. Airboss Ry. Prods.*, 320 F.3d 1354, 1367 (Fed. Cir. 2003); *MHL Tek v. Nissan Motor*, 655 F.3d 1266, 1273-74 (Fed. Cir. 2011); *DDB Techs. v. MLB Advanced Media*, 517 F.3d 1284, 1291-92 (Fed. Cir. 2008). The particular agreement language at-issue in this case arises from a long line of decisions recognizing that contracts using "hereby grants" language automatically assign rights to future inventions as soon as they are created. *E.g.*,

1 *FilmTec. v. Allied-Signal*, 939 F.2d 1568, 1570, 1573 (Fed. Cir. 1991); *Speedplay v.*
 2 *Bebop*, 211 F.3d 1245, 1253 (Fed. Cir. 2000); *Imation v. Koninklijke Philips Elecs.*,
 3 586 F.3d 980, 986 (Fed. Cir. 2009); *DDB Techs.*, 517 F.3d at 1290.

4 **b. Material facts**

5 Odyssey lacks standing to assert the patents-in-suit. During the course of his
 6 employment from 2001 to 2010 with Mobile Satellite Ventures (“MSV”), Dr.
 7 Karabinis served as the Chief Technical Officer, writing patents for MSV. When
 8 he started work at MSV, he entered into employment agreements that automatically
 9 assigned away all patent rights to his employer. Because the MSV Agreements
 10 automatically assigned Karabinis’ entire rights to his work to MSV, Karabinis
 11 could not assign those patent applications to his own company.

12 **B. Abandoned Issues (Civ. L.R. 16.1.f.2.b)**

13 Odyssey has abandoned a variety of claims, including all allegations that
 14 Apple infringes U.S. Patent No. 8,660,169 and that Apple infringes any of the
 15 claims of the remaining patents-in-suit other than the currently asserted claims.

16 Apple is not aware of any issues that it has abandoned and expressly reserves
 17 the right to challenge on appeal all of the adverse rulings to date.

18 **C. Exhibit List (Civ. L.R. 16.1.f.2.c)**

19 Attached as Exhibit A is a list of exhibits Apple expects to offer at the trial
 20 other than those to be used for impeachment with a description of each exhibit
 21 sufficient for identification. Apple reserves the right to include alternative copies of
 22 the same documents, including physical copies (e.g., textbooks), native versions,
 23 and electronically searchable versions. Apple further reserves the right to offer at
 24 trial exhibits identified on Odyssey’s exhibit list. Apple also notes that the
 25 inclusion of an exhibit on its list of exhibits is not agreement or consent that the
 26 exhibit may be admitted if presented by Odyssey, or a representation that Apple
 27 agrees that the exhibit should be introduced as evidence. For example, Odyssey’s
 28 expert reports are not admissible, and are listed here solely for identification as

1 items that may be used during the cross-examination of Odyssey's experts and
 2 other witnesses. In addition, the exhibit list may include exhibits subject to Apple's
 3 motions in limine.

4 **D. Witnesses (Civ. L.R. 16.1.f.2.d)**

5 Attached as Exhibit B is a list of witnesses, including the names and
 6 addresses of all prospective witnesses, except impeaching witnesses, and, in the
 7 case of expert witnesses, a brief narrative statement of qualifications of such
 8 witness and the substance of the testimony which such witness is expected to give.
 9 Exhibit B further indicates the current may call / will call status of the witnesses.

10 In addition, Apple will provide its deposition designations by October 13,
 11 2016, in compliance with the Court's Scheduling Order (Dkt. 111, ¶ 30).

12
 13
 14 Dated: October 5, 2016

/s/ Timothy S. Teter

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CERTIFICATE OF SERVICE

The undersigned certifies that counsel of record who are deemed to have consented to electronic service are being served on October 5, 2016, with a copy of this document via the Court's CM/ECF system per Local Rules. Any other counsel will be served by electronic means, facsimile, overnight delivery and/or first class mail on this date.

By: /s/ Timothy S. Teter

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